Research Gaps in DDFA

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Deactivation and Decommissioning Focus Area

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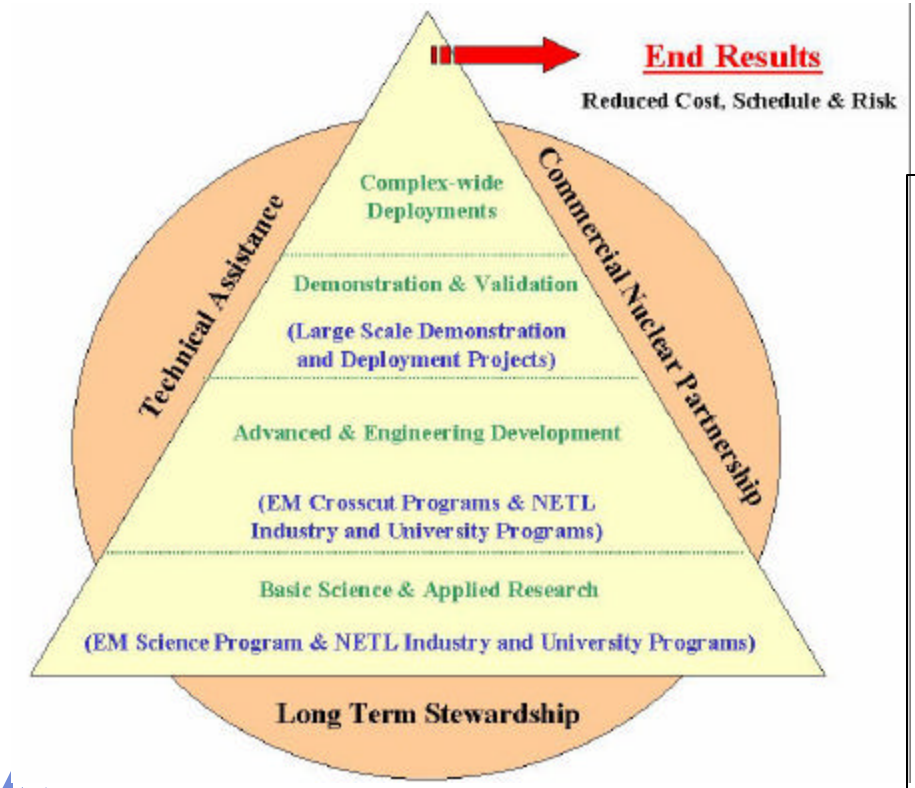
Presentation Outline

- DDFA Mission and Programs
- National Research Council Report for DDFA
- Current Projects
- Concluding Remarks

The DDFA Mission

"There are strong safety and economic incentives for developing and using innovative D&D technologies that may be achieved through scientific research. The long time frame for completing D&D (50 years or more) allows for substantive research to be completed and applied."

National Research Council 2001



DDFA mission statement:

Provide technological solutions which reduce the cost, risk and schedule to deactivate and decommission DOE's radiologically contaminated excess facilities

National Research Council (NRC) Report for DDFA

- **Identified 4 principle areas for research investment:**
  1) characterization of contaminated materials
     - especially volumetrically contaminated concrete and metals
  2) decontamination of equipment and facilities
  3) remote intelligent systems to improve worker safety
  4) end state definition for facility D&D
- **The first 3 areas were directly addressed by the 10 topic areas within the DDFA applied research solicitation**

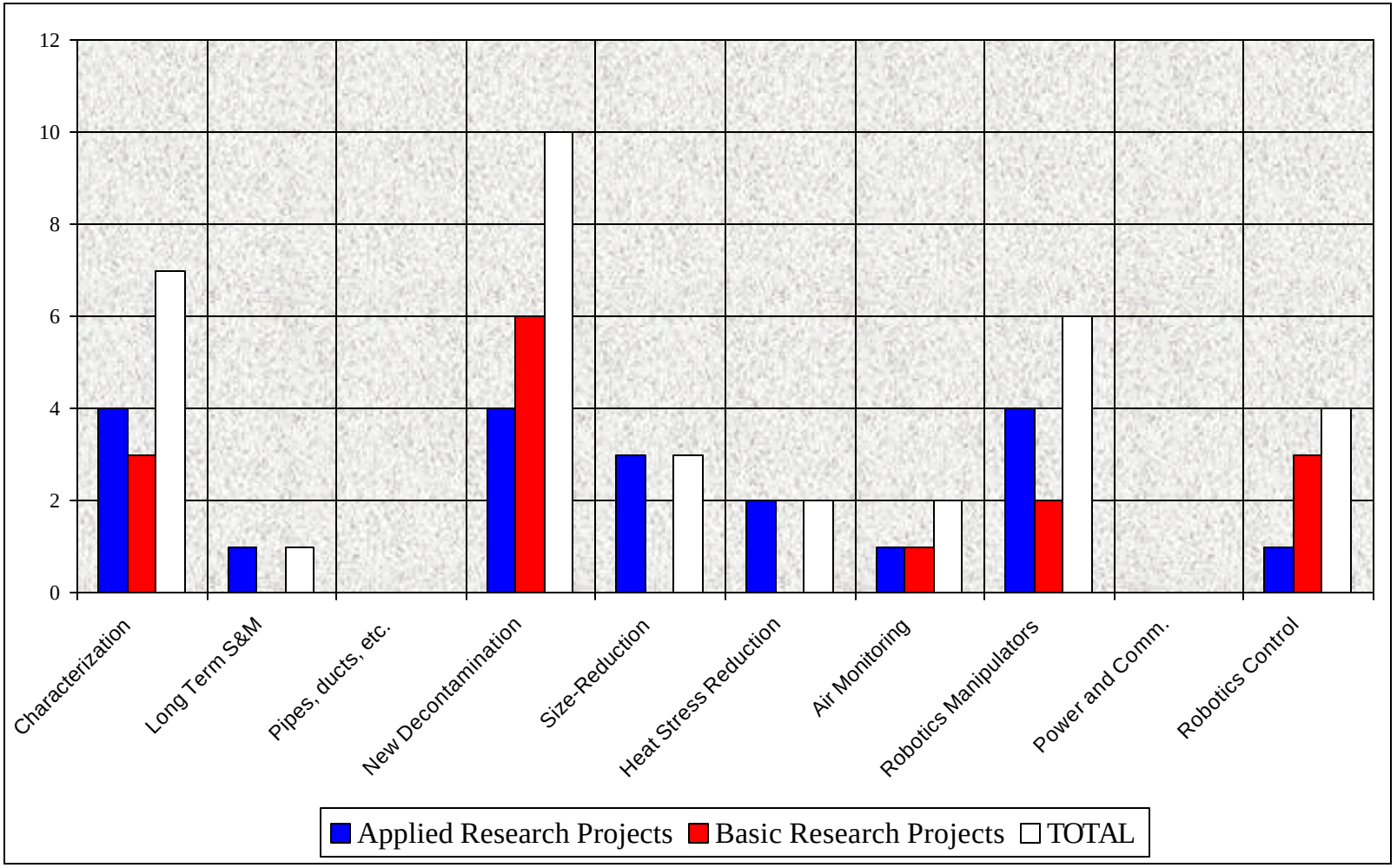
Applied R&D Topic Areas

Need Description	Applied Research Projects	Basic Research Projects
Improvements to Characterization Technology	4	3
New Systems for Long Term Surveillance and Maintenance	1	**0**
New Characterization Techniques for Pipes, Ducts, Tanks, etc.	**0**	**0**
Next Generation Decontamination Technology for Metals & Concrete	4	6
Improved Size-Reduction and Demolition Technologies	3	**0**

Applied R&D Topic Areas (continued)

Need Description	Applied Research Projects	Basic Research Projects
Technologies for Worker Heat Stress Reduction	2	**0**
Improved Air Monitoring Technology and Contamination Control	1	1
Advanced Manipulators and End Effectors	4	2
Tetherless Power and Communications Systems	**0**	**0**
Sensor- based Manipulator Control Systems	1	3

Applied R&D Topics (continued)



Carnegie Mellon BOA: Asbestos Pipe-Insulation Removal System

RedZone Robotics Houdini

3M Empore™ Membrane Separation Technology

Concluding Remarks

Carnegie Mellon Robotics Rosie

Science & Engineering Associates

Pipe Explorer™